EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	0	((board near roughness) with $1mu$1m).ab.	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/09/21 16:11
L2	0	((board near roughness) with $1mu$1m).ab.	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/21 16:11
L3	1	((board near2 roughness) with $1mu$1m).ab.	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/21 16:11
S1	72	roughness and (conductive near elastomer$3)	USPAT	OR	OFF	2007/09/21 14:45
S2	9	roughness same (conductive near elastomer$3)	USPAT	OR	OFF	2007/09/21 12:57
S3	7	roughness with (conductive near elastomer$3)	USPAT	OR	OFF	2007/09/21 13:01
S4	2	S2 not S3	USPAT	OR	OFF	2007/09/21 13:01
S5	9	S1 and "324"/$.ccls.	USPAT	OR	OFF	2007/09/21 13:30
S6	18	("4820376" | "5618189" | "5810607" | "5991165" | "6052286" | "6081429" | "6168442" | "6270363" | "6332786").PN. OR ("6447308"). URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/09/21 13:29
S7	2	S1 and "439"/$.ccls.	USPAT	OR	OFF	2007/09/21 13:30
S8	14	("5213715" | "5259770" | "5317255" | "5431571" | "5474458" | "5502889" | "5576519" | "5688584" | "5800650" | "5818700" | "5975922" | "6270363" | "6447308" | "6663799").PN. OR ("7059874"). URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/09/21 13:32
S9	31	S6 or S8	US-PGPUB; USPAT; USOCR	OR	OFF	2007/09/21 13:33
S10	1	S6 and S8	US-PGPUB; USPAT; USOCR	OR	OFF	2007/09/21 13:32
S11	9	S9 and rough$4	US-PGPUB; USPAT; USOCR	OR	OFF	2007/09/21 13:35
S12	11	S9 and $1mu$1m	US-PGPUB; USPAT; USOCR	OR	OFF	2007/09/21 13:47

EAST Search History

S13	5	roughness and (conductive near elastomer$3)	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/09/21 14:29
S14	1	(anisotropically near2 (electroconductive or elastomer$3)) with (rough$4 near2 $1mu$1m)	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/21 13:48
S15	0	(anisotropically near2 (electroconductive or elastomer$3)) with (rough$4 near2 $1mu$1m)	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/09/21 13:48
S16	1	(anisotropic$4 near2 (electroconductive or elastomer$3)) with (rough$4 near2 $1mu$1m)	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/09/21 13:56
S17	39	("4209481" | "4292261" | "4408814" | "4500757" | "4571542" | "4833402" | "4838347" | "4863757" | "4927368" | "5033675" | "5109596").PN. OR ("5317255"). URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/09/21 13:49
S18	1	(anisotropic$4 near2 (electroconductive or elastomer$3)) same (rough$4 near2 $1mu$1m)	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/09/21 13:57
S19	1	(anisotropic$4 near2 (electroconductive or elastomer$3)) same (rough$4 near2 $1mu$1m)	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/21 13:59
S20	1	(anisotropic$4 near2 (electroconductive or elastomer$3)). ti. and rough$4	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/09/21 14:00
S21	0	(anisotropic$4 near2 (electroconductive or elastomer$3)). ti. and rough$4 and $1mu$1m	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/09/21 13:58
S22	5	(anisotropic$4 near2 (electroconductive or elastomer$3)). ti. and rough$4 and $1mu$1m	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/21 14:30
S23	17	(US-5497033-$ or US-5565968-$ or US-6437551-$ or US-4422035-$ or US-6447308-$ or US-7059874-$ or US-6663799-$ or US-5818700-$ or US-6168442-$ or US-5317255-$ or US-5109596-$ or US-4571542-$). did. or (EP-1720019-$ or WO-2005080996-$).did. or (JP-2005241291-$ or JP-2004037785-$).did. or (WO-2005080996-$).did.	USPAT; EPO; JPO; DERWENT	OR	OFF	2007/09/21 13:59

EAST Search History

S24	2	smoothness and (conductive near elastomer$3)	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/09/21 14:29
S25	41	smoothness and (conductive near elastomer$3)	US-PGPUB; USPAT; USOCR	OR	OFF	2007/09/21 14:29
S26	0	smoothness near2 (conductive near elastomer$3)	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/09/21 14:29
S27	0	smoothness with (conductive near elastomer$3)	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/09/21 14:29
S28	4	(anisotropic$4 near2 (electroconductive or elastomer$3)).ti. and smooth$4 and $1mu$1m	US-PGPUB; USPAT; USOCR	OR	ON	2007/09/21 14:34
S29	1	(anisotropic$4 near2 (electroconductive or elastomer$3)) and smooth$4 and $1mu$1m	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/09/21 14:39
S30	4	"2003077560"	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/09/21 16:10
S31	2	"2000294043"	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/09/21 14:44
S32	0	jp11111064a	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/09/21 14:47
S33	0	jp110111064a	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/09/21 14:48
S34	0	jp110111064	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/09/21 14:48
S35	2	jp adj "11111064"	FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/09/21 14:48

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US007220796B2

(12) **United States Patent**
Mizumoto et al.

(10) Patent No.: **US 7,220,796 B2**
(45) Date of Patent: **May 22, 2007**

(54) CONDUCTIVE ELASTOMER COMPOSITION, CONDUCTIVE MEMBER USING CONDUCTIVE ELASTOMER COMPOSITION, IMAGE-FORMING APPARATUS HAVING CONDUCTIVE MEMBER

(75) Inventors: Yoshihisa Mizumoto, Hyogo (JP); Takayuki Hattori, Hyogo (JP); Tetsuo Mizeguchi, Hyogo (JP)

(73) Assignee: Sumitomo Rubber Industries, Ltd., Kobe-shi (JP)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 30 days.

(21) Appl. No.: 11/251,032

(22) Filed: Oct. 18, 2005

(65) Prior Publication Data
US 2006/0074162 A1 Apr. 6, 2006

Related U.S. Application Data

(52) Division of application No. 10/704,906, filed on Nov. 12, 2003, now Pat. No. 7,098,264.

(30) Foreign Application Priority Data
Nov. 13, 2002 (JP) 2002-329922

(51) Int. Cl.
H01B 1/06 (2006.01)

(52) U.S. Cl. 524/495; 524/430; 524/401; 429/56

(58) Field of Classification Search 524/495, 524/401, 430; 429/56
See application file for complete search history.

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Primary Examiner—David W. Wu
Assistant Examiner—Henry S. Hu
(74) Attorney, Agent, or Firm—Birch, Stewart, Kolasch & Birch, LLP

(57) **ABSTRACT**

A conductive elastomer composition includes an ionic-conductive elastomer component, which contains an anion-containing salt having a fluoro group (F—) and a sulfonyl group (—SO₂—). The conductive elastomer composition has a volume charge not more than 10⁴·⁵ (Ω·cm) when the volume charge is measured at a voltage of 100V applied therein in accordance with the method specified in JIS K6911. The conductive elastomer composition has a compression set not more than 30% when the compression set is measured at a temperature of 70° C. for 24 hours at a compressibility ratio of 25% in accordance with "the permanent set testing methods for rubber, vulcanized or thermoplastic" specified in JIS K6262.

12 Claims, 8 Drawing Sheets

US-PAT-NO: 7220796
DOCUMENT-IDENTIFIER: US 7220796 B2
TITLE: Conductive elastomer composition, conductive member using conductive elastomer composition, image-forming apparatus having conductive member

Brief Summary Text - BSTX (92):

It is favorable the conductive member such as the conductive roller and the conductive belt composed of the conductive elastomer composition has a surface roughness Rz not less than 1 .mu.m nor more than 8 .mu.m; and a surface friction coefficient in the range from 0.1 to 1.5.

Claims Text - CLTX (10):

10. A conductive member composed of a conductive elastomer composition according to claim 1, having a surface roughness Rz not less than 1 .mu.m nor more than 8 .mu.m; and a surface friction coefficient in a range from 0.1 to 1.5.

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